

Serial No.: 09/553,374  
Amendment dated: February 4, 2004  
Reply to Office Action of: December 8, 2003  
Atty. Docket No.: GJH-0019 (P1998J107A)

### REMARKS

Claim 25 has been canceled because it depended from a canceled claim.

### FIRST REJECTION UNDER 35 U.S.C. 103(a)

Claims 1-7, 10-15, and 18-23, and 25-26 have been rejected under 35 U.S.C. 103(a) as being obvious over United States Patent Number 5,292,428, Harrison et al. ("Harrison") in view of United States Patent Number 5,516,342, Cherpeck ("Cherpeck").

### EXAMINER'S POSITION

The Examiner takes the position that Harrison teaches a process wherein a hydrocarbon feedstock is passed through two or more hydrodesulfurization zones connected in a series. Each of these two or more hydrodesulfurization zones contains a packed bed of solid catalyst wherein the liquid is passed from a first zone to the next until hydrodesulfurization zone other than the first zone. Hydrogen-containing gas is recovered from a subsequent hydrodesulfurization zone; target sulfur levels, etc. are obtained. The Examiner believes that Harrison et al. teaches a process and composition that reasonably appears to be either the same or an obvious variation of the instantly claimed product and composition. However, the Examiner acknowledges that Harrison differs from the instant claims in that Harrison does not disclose the addition of functional additives to the processed feedstock. Thus, the Examiner has cited Cherpeck Col. 1, lines 14-26 because the Examiner takes the position that this portion of Cherpeck teaches that it is well known that automobile engines tend to form deposits on the surface of engine components and fuel detergents or "deposit control" additives prevent or control such deposits.

### APPLICANTS' POSITION

It is applicants' position that one having ordinary skill in the art and knowledge of Harrison and Cherpeck at the time the invention was made would not have found it obvious to arrive at the presently claimed invention.

Serial No.: 09/553,374  
Amendment dated: February 4, 2004  
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Atty. Docket No.: GJH-0019 (P1998J107A)

Applicants agree with the Examiner that Harrison does not suggest nor claim to combine the liquid product produced therein with at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate. However, applicants respectfully disagree with the Examiner that the combination of Harrison and Cherpeck obviate the instantly claimed invention.

Present Claim 1 requires that the liquid product stream produced in step (h) of claim 1 be subsequently combined with at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate.

While applicants concede that Cherpeck states at col. 1, lines 14-62 that automobile engines form deposits, one having ordinary skill in the art would not be motivated to combine the teachings of Cherpeck and Harrison. Harrison teaches a hydrodesulfurization process while Cherpeck discloses and claims a fuel additive composition, see Cherpeck col. 1, lines 66-67 and col. 30, line 50 and general synthetic procedures for making the fuel additive composition, see Cherpeck col. 5 through col. 11. Applicants respectfully submit that one having ordinary skill in the art would not be taught to include a step of adding at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate in a process patent, i.e. Harrison, that does not motivate one to include such a step. Applicants further submit that a patent directed at a novel fuel additive such as Cherpeck that further discloses that automobile engines tend to form deposits would not provide motivation for one having ordinary skill in the art to include the step of adding at least one of (i) one or more lubricity aid, (ii) one or more

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Atty. Docket No.: GJH-0019 (P1998J107A)

viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate in a hydrodesulfurization process for hydrocarbon feedstocks, i.e. Harrison.

Further, there is neither motivation nor teaching in Harrison and Cherpeck, alone or in combination, to add at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate to the liquid product stream of Harrison as is required by the instantly claimed invention. Thus, it is applicants' position that Cherpeck merely teaches one form of detergent that can be used in the presently claimed process. The Examiner is requested to reconsider and withdraw this rejection.

#### REJECTION UNDER 35 U.S.C. 103(a)

Claims 16 and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number 5,292,428, Harrison et al. (Harrison) in view of United States Patent Number 5,114,562, Haun et al. (Haun).

#### EXAMINER'S POSITION

Harrison is relied on by the Examiner as above but differs from the instant claims in not teaching a countercurrent aromatics hydrogenation stage or stripping of the liquid stage prior to the aromatics stage.

Haun is cited as teaching countercurrent aromatics hydrogenation and stripping of the liquid stage prior to the aromatics stage. The Examiner further states that Haun teaches a mineral oil conversion process that includes hydrodesulfurization and hydrogenation steps performed in separate reaction zones whereas the instantly claimed invention relates to the hydrogenation of distillate petroleum fractions to produce low sulfur content products. Desulfurization conditions employed are those customarily

Serial No.: 09/553,374  
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Atty. Docket No.: GJH-0019 (P1998J107A)

employed in the art for desulfurization of equivalent feedstocks and the effluent stream of the desulfurization zone is stripped with a stream of hydrogen-rich gas prior to being fed to the hydrogenation zone. The Examiner also mentions that the vapor phase stream from the hydrogenation step in Haun is highly rich in hydrogen and relatively low in hydrogen sulfide and is "cascaded" to the hydrodesulfurization zone and that hydrogen-rich gas may flow countercurrent to the liquid-phase hydrocarbons through one or more reaction zones.

#### APPLICANTS' POSITION

Claims 16 and 17 are dependent claims, and therefore, include all of the limitations of the claims from which they depend. Therefore, Claims 16 and 17 include all of the limitations of independent Claim 1. More importantly, Claims 16 and 17 include the limitation that the liquid product produced in step(h) of Claim 1 is combined with at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate.

As discussed above, it would not have been obvious to one having ordinary skill in the art and knowledge of Harrison to combine the liquid product produced therein with at least one of (i) one or more lubricity aid, (ii) one or more viscosity modifier, (iii) one or more antioxidant, (iv) one or more cetane improver, (v) one or more dispersant, (vi) one or more cold flow improver, (vii) one or more metals deactivator, (viii) one or more corrosion inhibitor, (ix) one or more detergent, and (x) one or more distillate or upgraded distillate because neither Harrison nor Haun, alone or in combination, suggest nor claim to combine the liquid product produced therein with any of the above. Therefore, the Examiner is requested to reconsider and withdraw this rejection.

Serial No.: 09/553,374  
Amendment dated: February 4, 2004  
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Atty. Docket No.: GJH-0019 (P1998J107A)

**REJECTION UNDER 35 U.S.C. 112(SECOND PARAGRAPH)**

Claim 25 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**EXAMINER'S POSITION**

The Examiner points out that claim 25 depends from previously canceled claim 24.

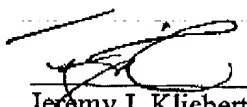
**APPLICANTS' POSITION**

Claim 25 has been canceled. Applicants take the position that claim 23 provides coverage for the invention embodied in presently canceled claim 25.  
The Examiner is requested to reconsider and withdraw this rejection.

Based on the preceding arguments and amendments the Examiner is requested to reconsider and withdraw the above rejections and pass this application to allowance. The Examiner is encouraged to contact applicant's attorney should the Examiner wish to discuss this application further.

Respectfully submitted:

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